



Proactive by Design

GEOTECHNICAL

ENVIRONMENTAL

ECOLOGICAL

WATER

CONSTRUCTION
MANAGEMENT



MEMORANDUM

TO: Josephine Acevedo Esquilin, PREQB

FROM: James Roehrig, GZA
John Colbert, GZA
Charles Lindberg, GZA

CC: Roger Anderson, TRC
Jeffrey Miller, HP Inc.
Socorro Martinez, USEPA
Manual Claudio Rodriguez, PREQB

DATE: January 2, 2018

RE: HP Inc. Voluntary Remediation Project
San German, Puerto Rico
Hurricane Damage Assessment

In the wake of Hurricanes Irma and Maria, Puerto Rico Environmental Quality Board (PREQB) requested HP, Inc. to provide an assessment of conditions associated with the above-referenced project. GZA is pleased to present this memorandum describing the condition of the San German site after the 2017 hurricane season.

On November 5, 2017, GZA's subcontractor, On-Site Environmental (OSE) of Dorado, Puerto Rico, conducted a walk-through inspection of the property. Upon completion of the inspection, OSE reported to GZA that there was no evidence of significant hurricane damage. A few uprooted trees were noted, as well as some scattered debris, but there was no damage to the decommissioned groundwater treatment system and the associated monitoring wells. See the attached photographic log for photographs from OSE's inspection, as well as the attached Site Plan which indicates the approximate locations of the photographs.

On December 19, 2017, additional inspection of the property including off-property monitoring wells was conducted by another GZA subcontractor, Milton Carlo. According to Mr. Carlo, the wells appeared to be in good condition, with no obvious indication of damage from the recent hurricanes. Photographs from Mr. Carlo's inspection are also included in the attached photographic log.

For all concerned, we hope that recovery from the recent hurricanes is progressing. As previously communicated and agreed, the next groundwater monitoring event will be in Spring 2018.

If you have any questions or concerns, please contact John Colbert at 781-278-5892 or john.colbert@gza.com or Jeff Miller (HP Inc.) at 970-898-8803 or jeffrey.s.miller@hp.com.



Attachments:

- 1- Site Plan with Approximate Photograph Locations
- 2 - Photographic Log

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Attachment 1

© 2016 - GZA GeoEnvironmental, Inc. J:\23.000-24.999\24065-19 JAC\Figures\GIS\W03a24065-19_SitePlan_201601_FIG2.mxd, 12/13/2016, 1:17:59 PM, antony.pungitore



LEGEND

ABANDONED BEDROCK EXTRACTION WELL

MONITORING WELL SCREENED IN FILL

MONITORING WELL SCREENED IN ALLUVIUM

MONITORING WELL SCREENED IN SAPROLITE

MONITORING WELL SCREENED IN BEDROCK

ABANDONED MONITORING WELL

SOIL VAPOR EXTRACTION WELL

INJECTION WELL (FILL)

INJECTION WELL (SAPROLITE)

SANITARY SEWER MANHOLE

APPROXIMATE PROPERTY BOUNDARY

ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

1

Photo Documentation Station

NOTES:

1) THIS MAP CONTAINS THE ESRI ARCGIS ONLINE WORLD IMAGERY MAP SERVICE, PUBLISHED DECEMBER 12, 2009 BY ESRI ARCGIS SERVICES AND UPDATED OFTEN. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.

2) THE CATCH BASINS, DRAIN LINES, DITCH AND VARIOUS LABELS WERE APPROXIMATELY LOCATED FROM THE FOLLOWING TWO PLANS:
- PLAN PROVIDED BY PEDRO PANZARDI & ASSOCIATES ENTITLED "SITE PLAN WITH ELEVATIONS OF SEWER SYSTEM", DATED: 03-11-1988, ORIGINAL SCALE: 1:500 OR 1"=41', SHEET NO.: 3-OF-7, PROJECT NO.: 8811, DRAWING NO.: 10-1-1.
- PLAN PROVIDED BY DIGITAL EQUIPMENT CORPORATION (DEC) OF SAN GERMAN, PUERTO RICO ENTITLED "PLAN & PROFILE", DRAWN BY: YELAZQUES, DATED: 01-23-1987, ORIGINAL SCALE: 1:500 OR 1"=41'.

3) REFERENCE ELEVATIONS AND WELL LOCATIONS WERE SURVEYED BY JOSE O. QUINONES MORET, BS, PLS OF PUERTO RICO ON AUGUST 16, 2014. ELEVATIONS ARE RELATIVE TO LAJAS 2 (PID 48894), NAVD 29 IN SABANA GRANDE, PUERTO RICO WITH ELEVATION 200.27 FEET. COORDINATES ARE PROVIDED IN NAD 83.

4) THE LOCATION OF INJECTION WELLS IW-1, IW-2, AND IW-3 WERE DERIVED FROM ELECTRONIC FILES PREPARED BY JAVIER E. BODIT ASSOCIATES, PSC LAND SURVEYORS & CONSULTANTS, ENTITLED: SUBSURFACE UTILITIES SURVEY PACKARD/DIGITAL FACILITIES.

0 25 50 100 150

SCALE IN FEET

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR THE USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

HP VOLUNTARY REMEDIATION PROJECT

SAN GERMAN, PUERTO RICO

POST HURRICANE MARIA PHOTO DOCUMENTATION

SITE PLAN

PREPARED BY:

GZA GeoEnvironmental, Inc.

Engineers and Scientists

www.gza.com

PREPARED FOR:

HP, Inc.

PROJ MGR: JAC

DESIGNED BY: JY

DATE: 12-13-2016

REVIEWED BY: CAL

DRAWN BY: EMD/ADP

PROJECT NO. 01.0024065.19

CHECKED BY: CAL

SCALE: 1 INCH = 50 FT

REVISION NO.

Attachment
1




Attachment 2



Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 1	Date: 11/5/17		
Direction Photo Taken: South			
Description: OW-301 located in southeast corner of Site			

Photo No. 2	Date: 11/5/17
Direction Photo Taken: East	
Description: OW-407 located in the northeast corner of the Site.	





Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 3	Date: 11/5/17		
Direction Photo Taken: East			
Description: Uprooted trees observed along driveway at Site.			

Photo No. 4	Date: 11/5/17	
Direction Photo Taken: South		
Description: DEC-203R and DEC-204O well area. Minor debris observed along driveway.		



Photographic Log


Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 5	Date: 11/5/17		
Direction Photo Taken: North			
Description: Groundwater treatment system located in the northeastern portion of the Site.			

Photo No. 6	Date: 11/5/17	
Direction Photo Taken: East		
Description: Piping along the northern Site boundary.		



Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 7	Date: 11/5/17		
Direction Photo Taken: North			
Description: Drum storage area in the northern portion of the Site.			

Photo No. 8	Date: 11/5/17
Direction Photo Taken: North	
Description: OW-304 series located in the northern portion of the Site. The minor fence damage was present prior to the recent hurricanes.	



The photograph shows an outdoor site with a chain-link fence in the background. A red circle highlights a section of the fence that appears damaged or sagging. To the right of the fence is a large, red, conical storage tank. In the foreground, there are two circular concrete structures, one of which has a dark, circular opening in the center. Red arrows point from the text labels to these features.

Damage to fence from Spring 2017

OW-304 wells



Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 9	Date: 11/5/17		
Direction Photo Taken: Northeast			
Description: OW-102 in the central portion of the Site.			

Photo No. 10	Date: 11/5/17
Direction Photo Taken: North	
Description: GZ-506U and GZ-506R located in the northern portion of the Site.	

A photograph showing a concrete building on the left and a large tree on the right. In the foreground, there is a concrete area with some vegetation. Two red arrows point to small structures labeled GZ-506U and GZ-506R. The background shows a green bridge and more trees.



Photographic Log


Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 11	Date: 11/5/17		
Direction Photo Taken: South			
Description: Wells (IW-1, IW-2, IW-3, and OW-307) located in the “A Street” driveway in the center of the Site.			

Photo No. 12	Date: 11/5/17
Direction Photo Taken: Northwest	
Description: OW-402 cluster located in the north-central portion of the Site.	





Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 13	Date: 11/5/17		
Direction Photo Taken: West			
Description: GZ-703R and OW-405 located near the southern border of the Site within the paved parking lot.			

Photo No. 14	Date: 12/19/17	
Direction Photo Taken: West		
Description: GZ-515U is located beneath this vegetation.		



Photographic Log



Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 15	Date: 11/5/17		
Direction Photo Taken: North			
Description: GZ-503U and GZ-503L located in the parking lot area of the Site.			

Photo No. 16	Date: 11/5/17
Direction Photo Taken: Southwest	
Description: WB-2L located along the western boundary of the Site.	

A photograph showing a site with tall, yellowish-green grass in the foreground. A red traffic cone is placed in the grass, with a red arrow pointing to it from a label 'WB-2L'. In the background, there is a gravel area, a white car, a dark car, and a building with a corrugated metal roof. A chain-link fence is visible behind the building. The sky is blue with white clouds.





Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 17	Date: 12/19/17		
Direction Photo Taken: N/A			
Description: GZ-504L, GZ-504R, and GZ-504U			
Photo No. 18	Date: 12/11/17		
Direction Photo Taken: North			
Description: GZ-501U/L located in the northern portion of the Site.			







Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 19	Date: 12/19/17		
Direction Photo Taken: East			
Description: GZ-511U located in the northwestern portion of the Site.			
Photo No. 20	Date: 11/5/17		
Direction Photo Taken: North			
Description: GZ-502L located in the northwestern portion of the Site.			





Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 21	Date: 12/19/17	 	
Direction Photo Taken: N/A			
Description: On-Site well cluster containing OW-305I, OW-305U, and BR-308.			
Photo No. 22	Date: 12/19/17	 	
Direction Photo Taken: N/A			
Description: OW-101 and OW-101L located in the central portion of the Site.			




Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 23	Date: 12/19/17		
Direction Photo Taken: N/A			
Description: Off-Site wells GZ-702L and GZ-702R.			
Photo No. 24	Date: 12/19/17		
Direction Photo Taken: N/A			
Description: Off-Site wells GZ-601L and GZ-601R.			



Photographic Log

Client Name: HP, Inc.		Site Location: PR-362, San German, PR	Project No. 01.0024065.20
Photo No. 25	Date: 12/19/17		
Direction Photo Taken: N/A			
Description: Off-Site wells GZ-701L and GZ-701R.			